A new modernization concept is born; New production facilities are under construction; Utility systems are being upgraded; Enhanced worker protection is sought; Progress is made on key projects

Projects and Modernization

MODERNIZATION: BUILDING A NEW Y-12

Within the next decade, new, inherently secure buildings will replace some Y-12 structures that are costly to operate and secure.

The new structures will provide ample protection for materials and will make the protection of large parcels of land and support buildings a thing of the past.

Tom Smith, recently named Y-12 Modernization manager says, "We have wrestled with modernizing Y-12 for years and now see an innovative new concept gaining momentum. Modernizing a 60-year-old manufacturing site has many implications, not the least of which are safety, security and continued mission capability."

Members of the Purification Facility team discuss progress during a site visit.

Utility upgrade projects have been approved, and a new production support facility and a new public interface facility are planned. More than 179 structures have been demolished or removed in the past three years, and demolition of deteriorated structures will continue as new facilities are occupied.

Key Features of a Smaller, More Responsive Y-12

- **70%** less floor space
- **50%** reduction in annual operating cost
- **90%** smaller high-security area to be protected
- Inherently secure facilities
- Avoidance of $200–$300 million for new Perimeter Intrusion Detection and Assessment System
- Beneficial occupancy in some facilities in less than 24 months
- Complete remaining facilities/infrastructure six to eight years earlier than previously planned

PROGRESS ON MAJOR LINE-ITEM PROJECTS

Purification Facility

Construction is about 95% complete on the first major production facility built at Y-12 in more than 30 years. Significantly, the project is running on schedule and under budget. The request to begin operation (Critical Decision-4) will be submitted in the spring of 2005. Recent accomplishments include:

- completion of all major civil and structural work,
- installation of process equipment and major packaged processor units,
- completion of more than 90% of 34 scheduled system turnovers,
- installation of all utilities and tie-ins and
- aggressive work on field and shop calibrations.

Highly Enriched Uranium Materials Facility

The HEUMF Project, the largest design effort at Y-12 in more than a decade, started construction in August. Full-scale operation is scheduled for 2008.

Nathan Babelay and Tim Sigmon of the HEUMF construction team check grading plans as excavation continues behind them.

Enriched Uranium Manufacturing Facility

The EUMF Project, cornerstone of Y-12's new modernization strategy, will replace current enriched uranium and other processing operations. The project team expects to receive CD-0 approval in early FY 2005. The design phase will begin in FY 2006, construction in FY 2008 and operation in FY 2013.

BeC Project

The Beryllium Capability Project has submitted CD-1 to NNSA and expects approval in early FY 2005. The project will upgrade an existing facility, installing modern equipment that will protect workers from exposure to beryllium and improve efficiency and reliability. Administrative controls are protecting workers until federally required engineered controls can be implemented. Design approval is expected in early FY 2005. Construction may start in early FY 2008.

Utilities Modernization

CD-0 packages for the Potable Water System Upgrade Project and the Electrical Distribution System Upgrade Project were submitted in June.

PWSUP will repair and upgrade the potable water system to meet regulatory requirements, including the addition of devices to prevent backflow between the Y-12 and City of Oak Ridge water systems and between the Y-12 potable water and fire protection systems.

EDSUP will improve reliability, operability and maintainability of the Y-12 electrical system. Conceptual designs will be completed next year. Construction is scheduled for completion in FY 2010.

Preliminary design for the Compressed Air Upgrades Project has been completed. Approval of detailed design work is expected in early FY 2005. Construction may start later in the year.

Conceptual design for the Steam Plant Life Extension Project (to ensure operation through 2025) has been completed. The CD-1 package was submitted in July. Preliminary design will be completed in 2005.

FACES OF Y-12

Tom Smith
Modernization Manager

The next generation will bring Y-12 a more diverse workforce, one highly skilled and trained, flexible and adaptive to change. This workforce also must be receptive to teamwork at all levels.